



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Andee L. Poole	Project Number J1817
Project Title Is the Lung Capacity of a Healthy Adult or the Lung Cap of an Adult w/ Lung Cancer Affected More by the Increase of Elev	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my science project was to determine whether the lung capacity of a lung with cancer or the lung capacity of a healthy lung was affected more by the increase of elevation. I am testing if an adult with lung cancer is affected more by elevation than a healthy adult because I wanted to understand a person's lung capacity and how it changes.</p> <p>Methods/Materials I used ten 12" round latex balloons (representing healthy adult lungs) and blew them up to 79cm round, and I used ten 5" round latex balloons (representing cancerous adult lungs) that I blew up to 53cm round. I used a black Sharpie pen and a fabric ruler to measure the center of each balloon and mark them. I then used twenty push pins and attached the balloons to four labeled yard sticks. Next, I placed the yard sticks into a vehicle at sea level to be transported. We drove to 2000ft, 4000ft, 6000ft, and stopped at Huntington Lake, CA, approximately 8000ft in elevation. At each stop in elevation I measured the balloons and recorded their size. After I found all the measurements, I found the average size of each group of balloons, and I compared the results.</p> <p>Results After numerous trials, my results showed that on average the balloons representing the lung capacity of a healthy adult increased in size by about 1.58cm. However, the balloons representing the lung capacity of an adult with lung cancer decreased in size by about 9.13cm. After completing my investigation, I found that the lung capacity of a lung affected by lung cancer changed 4.21cm more than the lung capacity of a healthy adult.</p> <p>Conclusions/Discussion After completing my investigation, I found that the lung capacity of an adult with lung cancer was affected more by the increase of elevation than the lung capacity of a healthy adult.</p>	
Summary Statement Using the affects of elevation to test the lung capacity of a healthy adult and an adult with lung cancer represented by balloons.	
Help Received Mother drove me to different elevations to perform experiment. Mother also took photographs.	